

Fig. 1 [Prior Art]

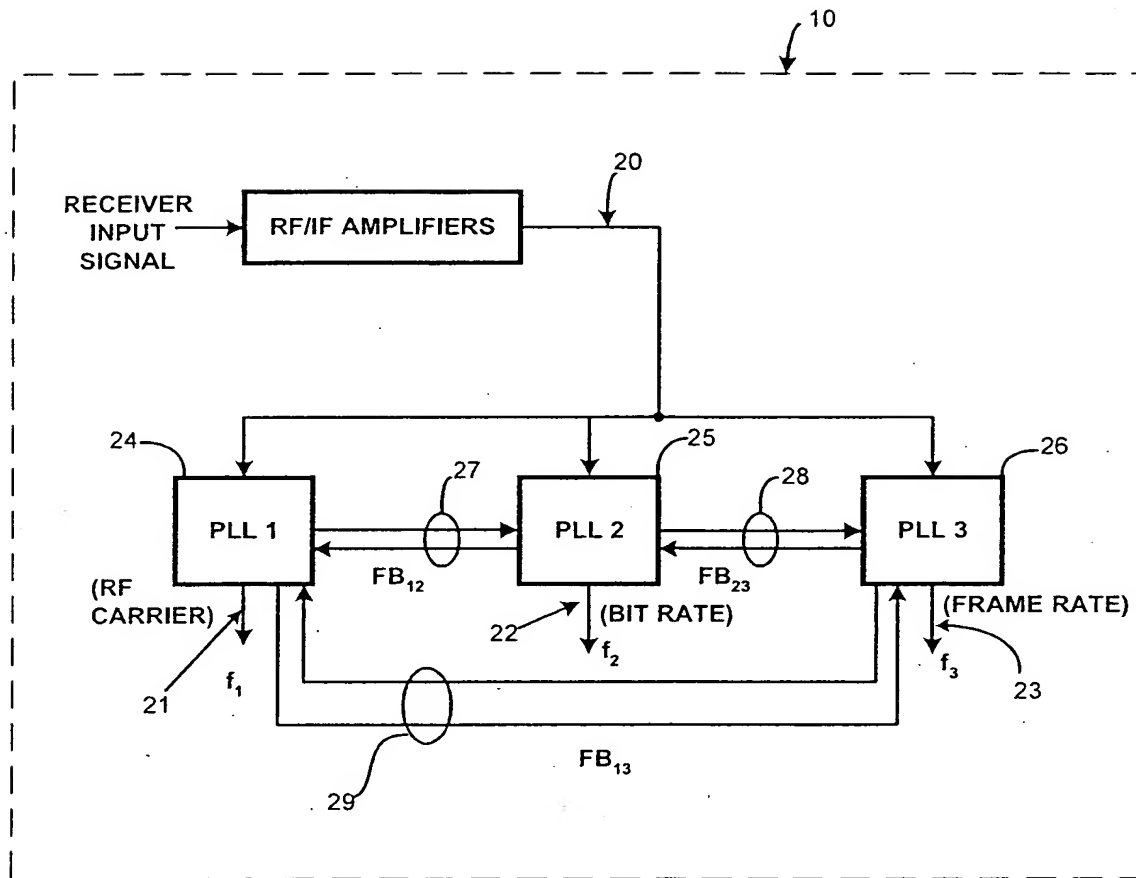


Fig. 2

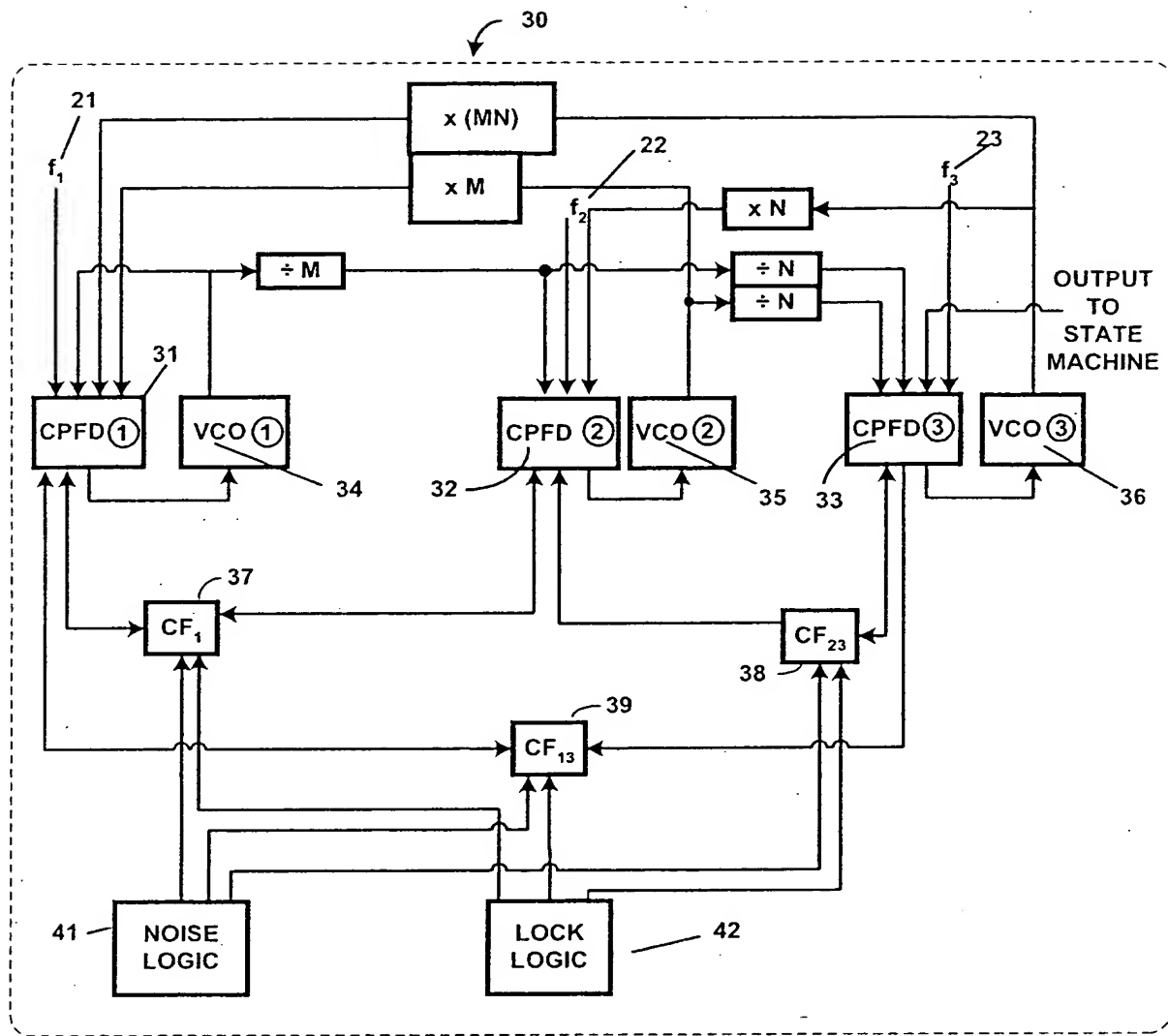
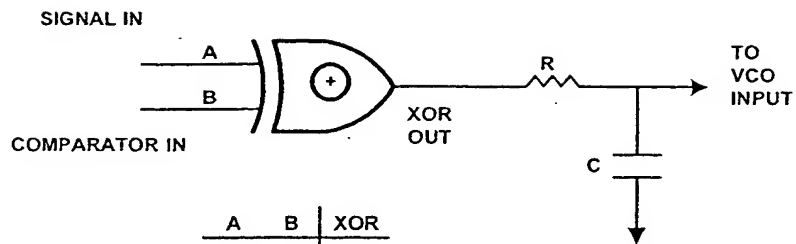
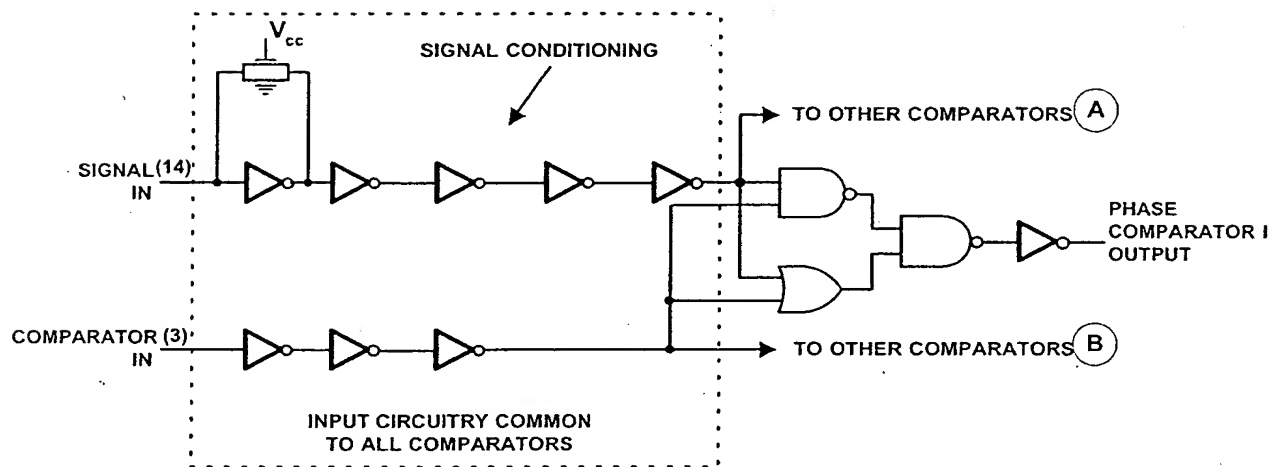


Fig. 3

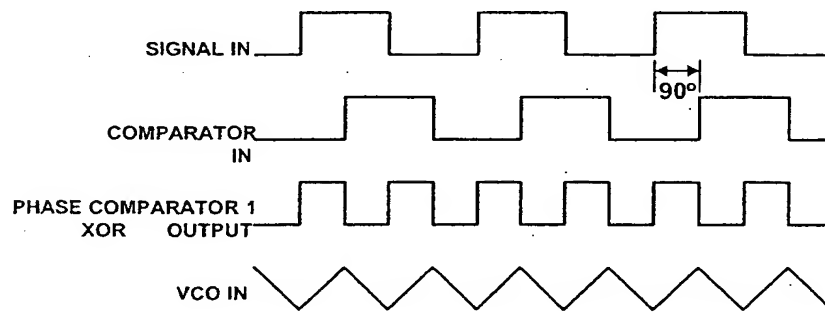


A	B	XOR
0	0	0
0	1	1
1	0	1
1	1	0

(A) BASIC XOR PHASE COMPARATOR

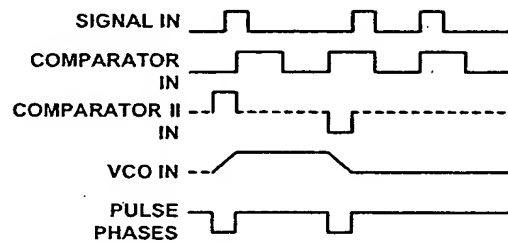
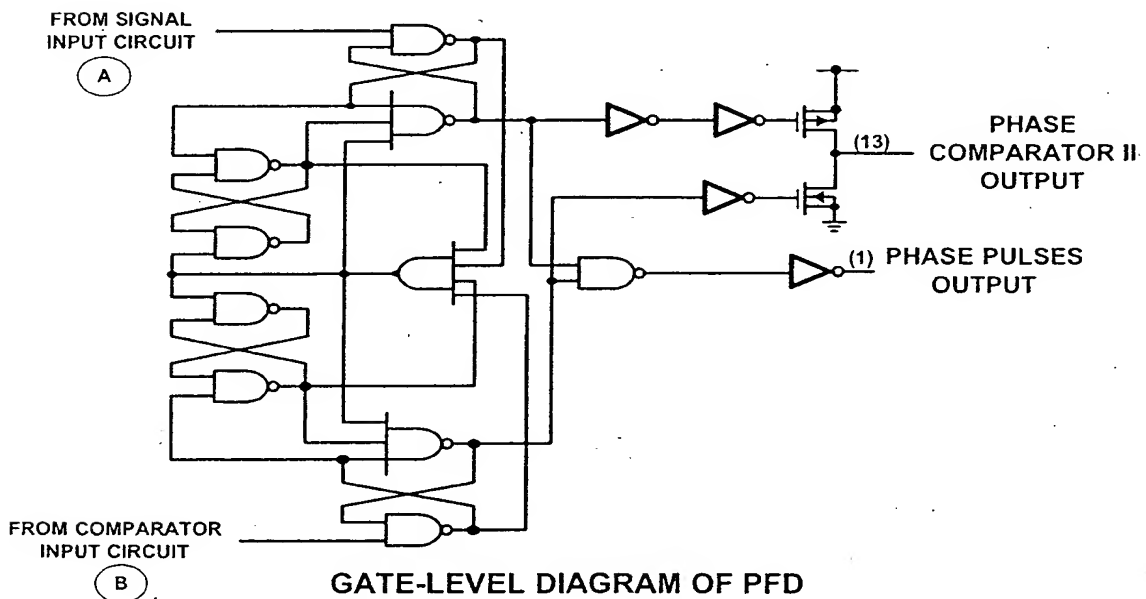
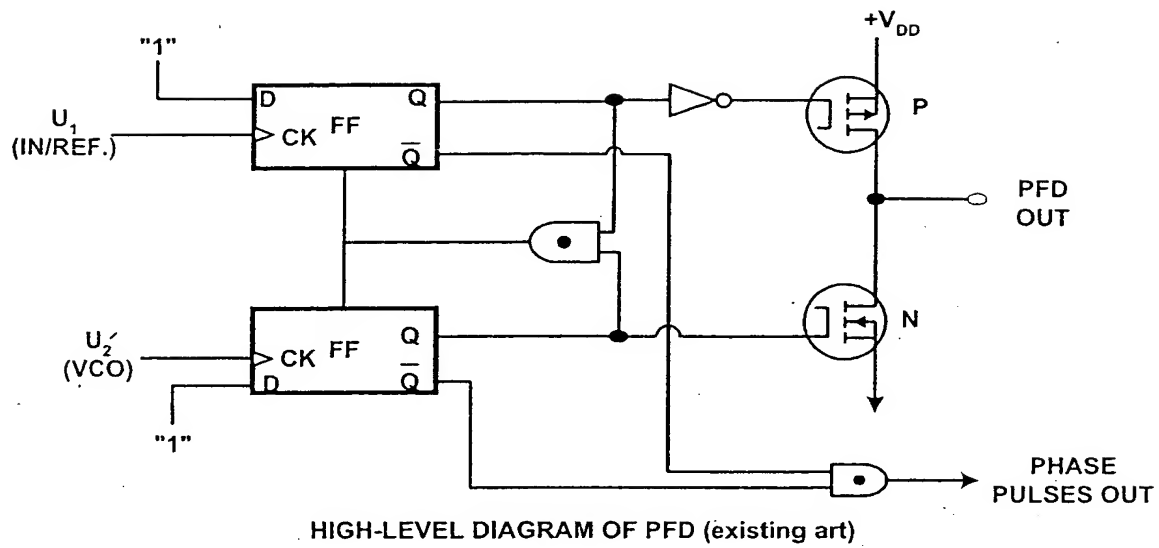


(B) DETAILED ON-CHIP IC CIRCUITRY IN 74HC4046



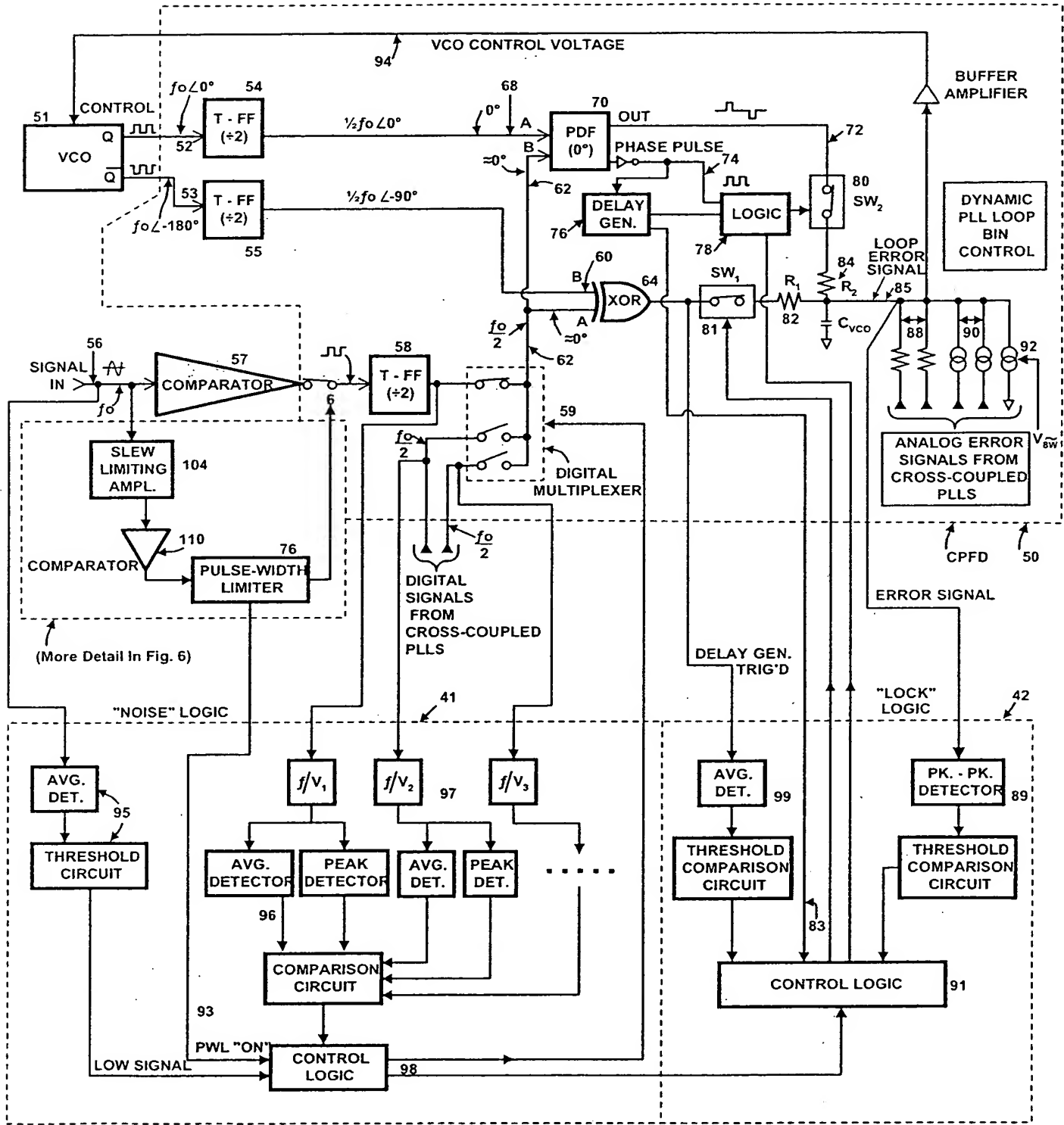
(C) TYPICAL XOR DETECTOR WAVEFORMS

Fig. 4 (Prior Art)



TIMING AND WAVEFORMS OF PFD (existing art)

Fig. 4 cont. (Prior Art)



**Fig. 5**

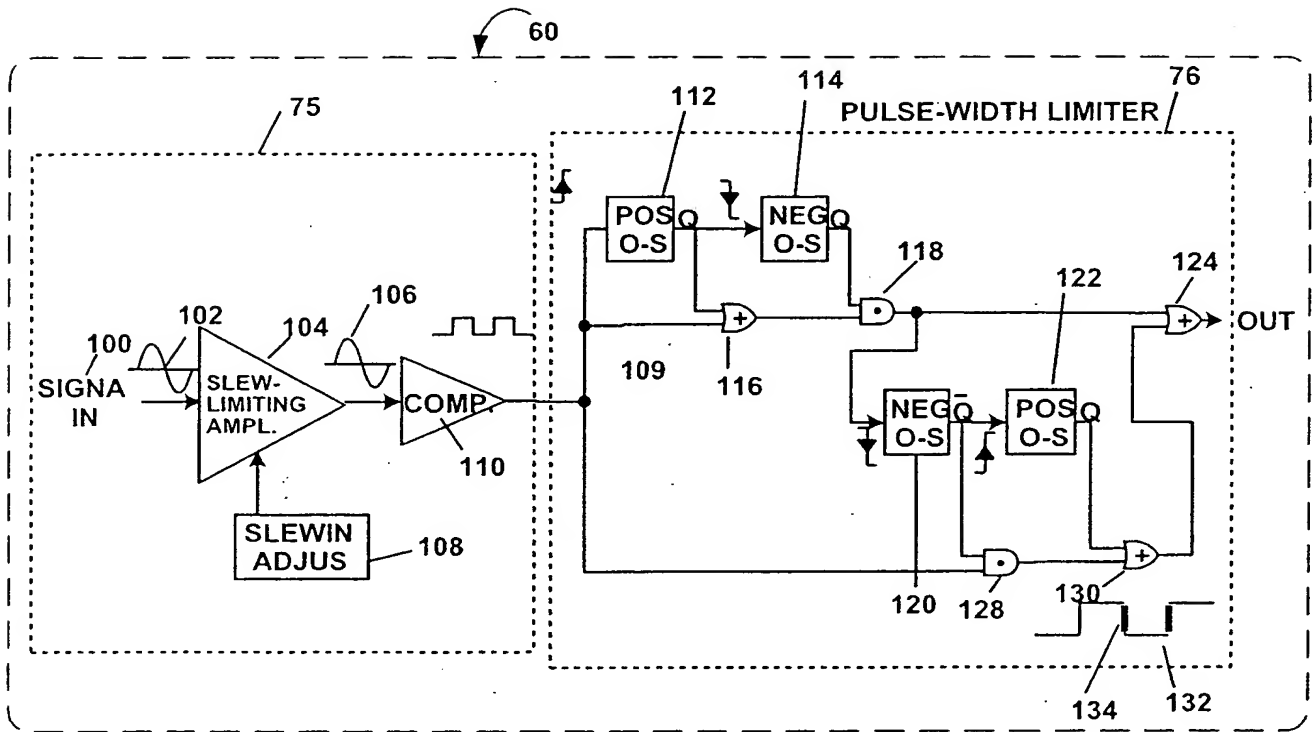


Fig. 6

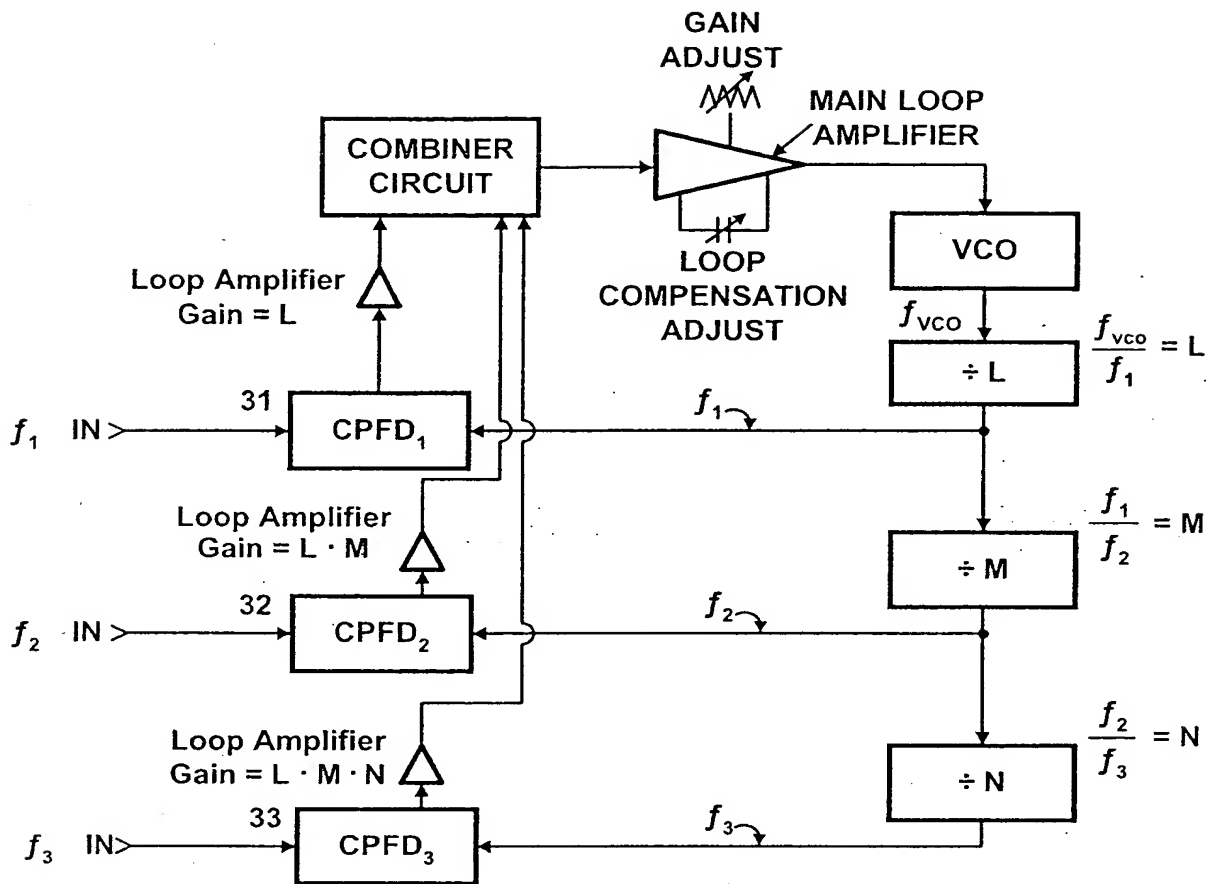


Fig. 7